



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human mini-YARS Protein
Catalog Number: hRP-1290
Manufacturer: LD Biopharma, Inc.

Introduction

Aminoacyl-tRNA synthetases catalyze the aminoacylation of tRNA by their cognate amino acid. Because of their central role in linking amino acids with nucleotide triplets contained in tRNAs, aminoacyl-tRNA synthetases are thought to be among the first proteins that appeared in evolution. Tyrosyl-tRNA synthetase (TYRRS, or YARS) belongs to the class I tRNA synthetase family. Cytokine activities have also been observed for the human tyrosyl-tRNA synthetase, after it is split into two parts, an N-terminal fragment that harbors the catalytic site and a C-terminal fragment found only in the mammalian enzyme. The N-terminal fragment (Mini-TyrRA) is an interleukin-8-like cytokine, whereas the released C-terminal fragment is an EMAP II-like cytokine.

Human YARS N-terminal fragment (Mini-TyrRA) cDNA (2 – 364 aa, derived from BC016689) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: YARS (TyrRA; CMTDIC; YRS; YTS)
Accession Number: NP_003671.1
Species: Human
Size: 50 µg / Vial
Composition: 0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Sucrose.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.



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Key References

Gang Cheng, et al., *Effect of mini-tyrosyl-tRNA synthetase on ischemic angiogenesis, leukocyte recruitment, and vascular permeability*. Am J Physiol Regul Integr Comp Physiol. 295,R1138 – R1146 (2008)

Fu,G., et al., *tRNA-controlled nuclear import of a human tRNA synthetase*. J. Biol. Chem. 287 (12), 9330-9334 (2012)

Zeng,R., et al., *Inhibition of mini-TyrRS-induced angiogenesis response in endothelial cells by VE-cadherin-dependent mini-TrpRS*. Heart Vessels 27 (2), 193-201 (2012)

Applications

1. May be used for in vitro Mini-YARS protein mediated interleukine-8 like activities regulation study with this protein as either coating matrix protein or soluble factor.
2. May be used for Mini-YARS protein – protein interaction assay.
3. As Enzymatic substrate for various proteases.
4. May be used for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFGDAPSPPEEKLHLITRNLQEVLGEEKLKEILKEREL
KIYWGATTTGKPHVAYFVPMASKIADFLKAGCEVTILFADLHAYLDNMKAPWELLELRVSYENV
IKAMLESIGVPLEKLFKFKGTDYQLSKEYTLDVYRLSSVVTQHDSKKAGAEVVKQVEHPLLSGL
LYPGLQALDEEYLVKVDAAQFGGIDQRKIFTFAEKYLPAALGYSKRVHLMNPMVPGLTGSKMSSSEE
ESKIDLLDRKEDVKKLKKAFCEPENVENNGVLSFIKHVLFPLKSEFVILRDEKWGGNKTYTAY
VDLEKDFAAEVVHPGDLKNSVEVALNKLLDPIREKFNTPALKKLASAAYPDPSKQKPMAGPAK
NSEPEEVI